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In general but little can be said about the observations of the second half of the year; the surface of the planet shows so great a variability that no resemblance can be found between the drawings. But it was remarked that the equator was always covered with a greenish-yellow zone, extending from one-fourth to one-third of the minor axis of the disk, and filled with irregular clouds and nebulosities. The poles were always surrounded by a dark shade.

The instrument with which the observations have been made is the 10¼-inch Browning-Newtonian Reflector.

The description of the drawings of *Mars* is much more difficult than of *Jupiter*, as well-defined spots can only be seen with good definition. Thus but little remains to say of the observations.

In January and February of the year 1882 nine observations and drawings were made. Some of the drawings show well-defined spots of great extent.

The colour of the markings is more decided towards the centre of the disk. Here the greyish-green markings contrast very strongly with the red portions of the disk, and thus appear well defined.

Towards the limb the colours are paler and feebler, no part being at all defined.

The northern ice-cap was distinctly visible on all occasions, surrounded by a ring of bright white colour.

Eugen de Gothard believed that he twice glimpsed one of the satellites: viz. on February 5, $8^h\ 0^m$ H.M.T., when he saw an exceedingly small starlike point at a distance of about 2·5—3 *Mars*-diameters from the disk in the N.W. direction; and on February 9, $8^h\ 15^m$ H.M.T., when a bright point was noticed on the S.E. side of the planet at about the same distance. The magnifying power was 436.

Note on the Chromosphere. By the Rev. S. J. Perry, F.R.S.

A letter appeared in the *Observatory* a few months since containing a communication from Professor Respighi on the subject of the Chromospheric Lines between A and C, and a wish was expressed that English observations bearing on his results might be brought before the public. I have therefore thought it worth while to bring under the notice of the Fellows of the Society an observation taken a few days ago.

On May 30, whilst taking the usual daily measures of the Chromosphere, my assistant at Stonyhurst Observatory, Mr. W. McKeon, observed the bright line Kirchoff 654·3 between C and B. It was only visible near the point 63° 58′ E. of N., image direct. Sweeping round the Sun's limb the chromosphere became suddenly intensely bright at this point, and also very wide, and an

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extraordinary bright cloud, displaced towards the less refrangible portion of the spectrum, appeared near the upper end of the C line. The line K 654·3 was almost as bright as C, but was not displaced. This brilliant portion of the chromosphere proved to be the beginning of a large prominence, and as the prominence increased in height the line K 654·3 faded away, becoming invisible where the prominence was highest and brightest. On sweeping back to the former position the bright cloud was found to have disappeared, and both C and K 654·3 were somewhat less brilliant than before.

The solar drawing on June 2 shows that a moderately large group of spots was just on the limb at the point where K 654·3 was seen on May 30. Another larger group of spots has burst out since May 30, and is already past the centre of the disk.

Stonyhurst Observatory :
1883, *June* 5.

Note with respect to the Limb of the Planet Jupiter.

By A. C. Ranyard, M.A.

At a recent meeting of the Astronomical Society Capt. Noble stated that, in observing an eclipse of *Jupiter's* fourth satellite on April 4, 1883, he was struck with the slow manner in which the light of the satellite disappeared and flashed up again at intervals, so brightly that he could not persuade himself that the changes of light were due to scintillation or disturbance in the Earth's atmosphere. Mr. Marth showed that the slow disappearance was due to the fact that the satellite, on the occasion referred to, entered the northern edge of the cone of shadow cast by the planet very obliquely; but the flashing up again of the light of the satellite at intervals was not explained. Direct observations of *Jupiter* point to the existence of an extensive atmosphere in which great masses of cloud are suspended, I would suggest that the flashing up at intervals of the light of the satellite was due to its passage through darker regions in the penumbra of the planet's shadow caused by clouds in the atmosphere of *Jupiter*. The oblique passage of the satellite through the penumbral region of the shadow, probably causing the changes of illumination to last for a longer period than on ordinary occasions, when the satellite plunges more perpendicularly into the cone of shadow.

The object of the present note is to bring together some observations of eclipses of *Jupiter's* satellites and occultations by the limb of the planet, which tend to show that *Jupiter* has not a definite, hard outline, but that the limb is partially transparent with here and there regions of greater opacity.

Dr. T. D. Siminton, of St. Paul, U.S.A., observed the previous eclipse of the fourth satellite. On that occasion the

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